

EDUCATIONAL
RESOURCES for
SCHOOLS and
COMMUNITIES



⑥ 1994

⑤ **NASA**
National Aeronautics and
Space Administration
Lewis Research Center
Cleveland, Ohio 44135

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NASA Lewis Educational Services

NASA provides educational materials and programs relating to the Nation's space and aeronautics programs for all levels of academic institutions from elementary schools to colleges. Each NASA center has established resource centers to provide educators and regional academic institutions with a variety of services and educational materials. The NASA Lewis Educational Services Office (ESO) is the resource center for the regional area comprising Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin. This brochure briefly describes our services for the educational community. For more detailed information about any of these services, please write, telephone, or fax.

Educational Services Office, MS 7-4
NASA Lewis Research Center
21000 Brookpark Road
Cleveland, OH 44135
Telephone: (216) 433-6630
Fax: (216) 433-3344

Contents

Educational Conferences	1
Visitor Center	1
Teacher Resource Center	1
Regional Teacher Resource Centers	2
Central Operation of Resources for Educators.....	3
Audiovisual Library.....	3
Lunar Sample Program	3
Telelectures.....	3
Summer Aerospace Workshops	4
NEWMAST and NEWEST Workshops.....	4
Spacemobile/Aerospace Education Services Program.....	4
Preservice and In-Service Education.....	5
Educational Television	5
Satellite Dish Programs	5
Spacelink	6
NASA Lewis Bulletin Board System.....	6
NASA Report to Educators	7
Speakers Bureau	7
Special Programs	7
Student Programs	7
Where to Write for Services	8

Educational Conferences

To help educators meet the challenge of our changing world, the Educational Services Office offers a variety of educational conferences. They may be in a hands-on workshop format or cosponsored with another organization, but all are unique and targeted for a specific audience. The ESO has held space shuttle launch conferences, a biology conference, elementary teachers workshops, guidance counselors workshops, a Great Lakes Planetarium Conference, a Simulated Shuttle Mission Workshop, a Fueling the Educational Explosion Conference, and a Great Lakes Aviation and Space Conference. Teacher in-service programs can be customized with specific themes. Questions regarding conferences may be directed to the ESO.

Visitor Center

The Visitor Center is the nucleus of visitor programs at NASA Lewis. In addition to hearing a live presentation, watching a film, or perhaps participating in a special program, visitors may also explore the 9000 square feet of exhibit area, where they will be able to learn about aerospace accomplishments of the past and some exciting hopes of tomorrow. Tours of selected research facilities can be arranged for groups of 20 or more. For school field trips we offer school programming designed to be compatible with school curricula and geared to specific grade levels. The Visitor Center is open every day and there is no admission charge. The hours of operation are weekdays from 9 a.m. to 4 p.m.; Saturdays from 10 a.m. to 3 p.m.; and Sundays from 1 p.m. to 5 p.m. The Visitor Center's address is NASA Lewis Visitor Center, Mail Stop 8-1, 21000 Brookpark Road, Cleveland, OH 44135. The telephone number is (216) 433-2001.

Teacher Resource Center

The Teacher Resource Center (TRC), located in the Lewis Visitor Center, houses a collection of supplemental resource materials that can be easily incorporated into the classroom at all grade

levels. Resources include 35-mm slides, audiocassettes, audiocassette and slide programs, lesson plans, NASA publications, videotape programs, and ideas for classroom activities and demonstrations. Slides are copied at cost by TRC personnel. Teachers may duplicate NASA programs onto their blank cassettes. An appointment is needed to duplicate videotapes or to view and select other materials. The telephone number is (216) 433-2017.

Regional Teacher Resource Centers

We currently have nine satellite regional teacher resource centers in our six-state region:

NASA Teacher Resource Center
Parks College of St. Louis University
400 Falling Springs Road
Cahokia, IL 62206

NASA Teacher Resource Center
Teacher Explorer Center,
216 O'Dowd Hall
Oakland University
Rochester, MI 48309-4401

NASA Teacher Resource Center
School of Education
University of Evansville
1800 Lincoln Avenue
Evansville, IL 47714

NASA Teacher Resource Center
Museum of Science & Industry
57th Street and Lake Shore Drive
Chicago, IL 60637-2093

NASA Teacher Resource Center
Olson Library Media Center
Northern Michigan University
Marquette, MI 49855

NASA Teacher Resource Center
101 Ronan Hall
Central Michigan University
Mount Pleasant, MI 48859

NASA Teacher Resource Center
Center for Information Media
St. Cloud State University
St. Cloud, MN 56301

NASA Teacher Resource Center
Curriculum and Instruction
MSU Box 52/P.O. Box 8400
Mankato State University
Mankato, MN 56002

NASA Teacher Resource Center
Morris Hall, Room 200
University of Wisconsin at LaCrosse
LaCrosse, WI 54601

Central Operation of Resources for Educators

The Central Operation of Resources for Educators (CORE) was established for the national and international distribution of NASA-produced educational materials in audiovisual format. CORE represents an option in obtaining copies of NASA-produced videotapes, slides, filmstrips, and slide programs. Rather than copying their own materials in our teacher resource centers, educators may find it more convenient to purchase materials directly from CORE. A catalog can be obtained by writing NASA CORE, Lorain County JVS, 15181 Route 58 South, Oberlin, OH 44074.

Audiovisual Library

NASA 16-mm films and videotapes in various formats are available for loan to educators, organizations, and television and cable stations in our six-state region. Selected programs are available in open-captioned format for the hearing impaired. Write, call, or fax the Media Services Corporation, NASA Film/Video Distribution Library, P.O. Box 58425, Houston, TX 77258. The telephone number is (713) 486-9606 and the fax number is (713) 486-7806.

Lunar Sample Program

After attending a certification workshop, teachers can be scheduled to receive lunar samples for temporary use. For information on certification and scheduling, call our Teacher Resource Center at (216) 433-2017.

Telelectures

Using telephone technology, teachers and students can go on a field trip right in their classrooms. Students have an opportunity to ask the Lewis lecturer questions during the telelecture. Teachers may select a topic from our program offerings and have supporting visuals sent in advance of the telelecture. Arrangements can be made by calling our Teacher Resource Center at (216) 433-2017.

Summer Aerospace Workshops

NASA Lewis cosponsors summer workshops at various colleges and universities in our six-state region. They are targeted for elementary and secondary teachers and are usually 2 weeks long. Three hours of graduate credit are often offered and tuition is charged. Contact the ESO for a current listing of summer aerospace workshops.

NEWMAST and NEWEST Workshops

NEWMAST, NASA Educational Workshop for Math and Science Teachers, and NEWEST, NASA Educational Workshop for Elementary School Teachers, are workshops held at NASA centers throughout the country. They are 2 weeks long and take place during the summer. Both workshops are funded by NASA and cosponsored by the National Science Teachers Association (NSTA). Winners of a NEWMAST or NEWEST award spend 2 weeks at a NASA center, witness its inner workings, learn the latest technological information directly from NASA scientists and engineers, and bring back a wealth of materials to their classrooms and communities. Applications are available, starting in November of each year, from the National Science Teachers Association, Science, Space & Technology Programs, 1742 Connecticut Avenue N.W., Washington, DC 20009. The closing date for accepting applications is in February. For further information contact NSTA or the ESO.

Spacemobile/Aerospace Education Services Program

The Aerospace Education Services Program (AESP), commonly referred to as "Spacemobile," is a national program of free services to teachers, students, and the general public. AESP provides the professional services of aerospace education specialists who are qualified educators and are knowledgeable in aeronautics and the space sciences. These specialists are able to communicate NASA's activities—past, present, and future. They conduct workshops, seminars, etc., for teachers;

provide lectures, demonstrations, and special classroom programs for students; and make presentations to civic clubs and professional groups. For further information and scheduling write to Aerospace Education Services Program, Mail Stop 8-1, NASA Lewis Research Center, 21000 Brookpark Road, Cleveland, OH 44135, or call (216) 433-5572.

Preservice and In-Service Education

Preservice and in-service education for teachers is now a major thrust of the Aerospace Education Services Project. NASA Lewis will send an aerospace education specialist to conduct programs for an entire school district. Arrangements can also be made for in-service programs to be held at the Lewis Research Center. For further information contact the ESO.

Educational Television

NASA Lewis provides educational television programming that is distributed by the Southern Educational Communications Association (SECA) via the satellite Spacenet 1 (channel 3, 3.76 GHz; audio subcarrier, 6.8 MHz). These weekly programs are 30 minutes long. Feeds are at 12 noon eastern time, Sundays. Programs are not copyrighted and can be used without restriction if used in their entirety. Subjects deal with air and space themes. If your school would like to receive information about upcoming shows, please write to the ESO on school letterhead and we will add your school's name to our mailing list.

Satellite Dish Programs

Schools or individuals possessing a satellite dish may access NASA programming on the NASA Select television network through RCA Satcom F2R, transponder 13 (frequency, 3.96 GHz; look angle, 72° W longitude). The program schedule is aired daily. Programs may be videotaped for classroom use.

Another exciting satellite program provided by NASA is our series of interactive videoconferences for teachers. We offer four 90-minute videoconferences featuring program briefings by NASA project personnel and educational activities presented by aerospace education specialists. There is no charge to participate. Registration materials and scheduling information can be obtained by writing NASA Videoconferences, Oklahoma State University, Dept. of Aviation & Space Education, 300 North Cordell, Stillwater, OK 74078-0422. The satellite used for this project is Westar IV, transponder 19.

Spacelink

NASA Spacelink is a collection of NASA information and educational materials stored on a computer at the Marshall Space Flight Center in Huntsville, Alabama. The system can be accessed over regular telephone lines. It is designed to communicate with a wide variety of computers and modems, especially those most commonly found in classrooms and homes. NASA Spacelink is free, but you will be charged by your telephone company for long-distance calls. The computer access number is (205) 895-0028, and the data format is 8 data bits, no parity, and 1 stop bit.

NASA Lewis Bulletin Board System

Another option available to computer modem users is the NASA Lewis Bulletin Board System (BBS). Similar to NASA Spacelink, the Lewis BBS can be accessed by calling (216) 433-8888 in Cleveland, Ohio. There is no charge for this service, except for long-distance telephone charges. Users calling the Lewis BBS can use the "electronic mail" capability to access NASA information, the teachers corner, Visitor Center activities, and Lewis Astronomy Club information, or to ask questions and leave messages on subjects of a scientific nature, particularly aerospace subjects. For further information contact the ESO.

NASA Report to Educators

NASA "Report to Educators" is published quarterly for the educational community. Its contents are restricted to news and information about NASA. To receive free issues of "Report to Educators," write the Educational Affairs Division, Code XE, NASA, Washington, DC 20546.

Speakers Bureau

Lewis staff members will give presentations on a host of subjects to civic clubs and professional groups. No honorarium is charged, but the requesting organization must pay travel expenses for events scheduled outside a 50-mile radius of NASA Lewis. Call the Speakers Bureau at (216) 433-2003, or send your request to Speakers Bureau, NASA Lewis Research Center, Mail Stop 8-1, 21000 Brookpark Road, Cleveland, OH 44135.

Special Programs

Special programs are truly unique educational experiences. Some special programs that we have conducted are community involvement programs, a Science Fiction/Science Fact Art Show, cosmic costume contests, concerts for children with the Cleveland Orchestra, "A Midsummer Night's Dream" (set in "outer space") cosponsored by the Great Lakes Theater Festival, shuttle mission simulations, and space art contests. For further information contact the ESO.

Student Programs

Student programs can vary from year to year. The Student Programs Office supports the following ongoing programs:

- The Space Science Student Involvement Program (SSIP), cosponsored by the National Science Teachers Association, provides an opportunity for students in grades 7-12 to activate their problem-solving, writing, and creative skills in a variety

of subjects and win awards ranging from certificates of recognition to expense-paid space experience trips.

- The Summer High School Apprenticeship Research Program (SHARP) provides students within commuting distance of NASA Lewis with meaningful work experience in a research environment.
- Science fairs.

Special student programs have also been conducted, such as Aeronautics Olympic Decathlon, Adopt-a-School, Name the Orbiter Recognition Day, programs for gifted and talented children, and simulated shuttle missions. Questions may be directed to (216) 433-6656 or the Student Programs Office, Mail Stop 7-4, NASA Lewis Research Center, 21000 Brookpark Road, Cleveland, OH 44135.

Where to Write for Services

Publication lists, film lists, and information about other services are available from the education office at the NASA center serving your state. (See the following list.) There is also a resource center for educators at the Alabama Space and Rocket Center, Tranquility Base, Huntsville, AL 35807.

NASA Ames Research Center
Moffett Field, CA 94035

Serves Alaska, Arizona, California, Hawaii, Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming

NASA Goddard Space Flight Center
Greenbelt, MD 20771

Serves Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont

NASA Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena, CA 91109

Answers inquiries related to space exploration and other JPL activities

NASA Johnson Space Center
Houston, TX 77058

Serves Colorado, Kansas, Nebraska,
New Mexico, North Dakota, South
Dakota, Oklahoma, and Texas

NASA Kennedy Space Center
Kennedy Space Center, FL 32899

Serves Florida, Georgia, Puerto
Rico, and the Virgin Islands

NASA Langley Research Center
Hampton, VA 23665

Serves Kentucky, North Carolina,
South Carolina, Virginia, and West
Virginia

NASA Lewis Research Center
Cleveland, OH 44135

Serves Illinois, Indiana, Michigan,
Minnesota, Ohio, and Wisconsin

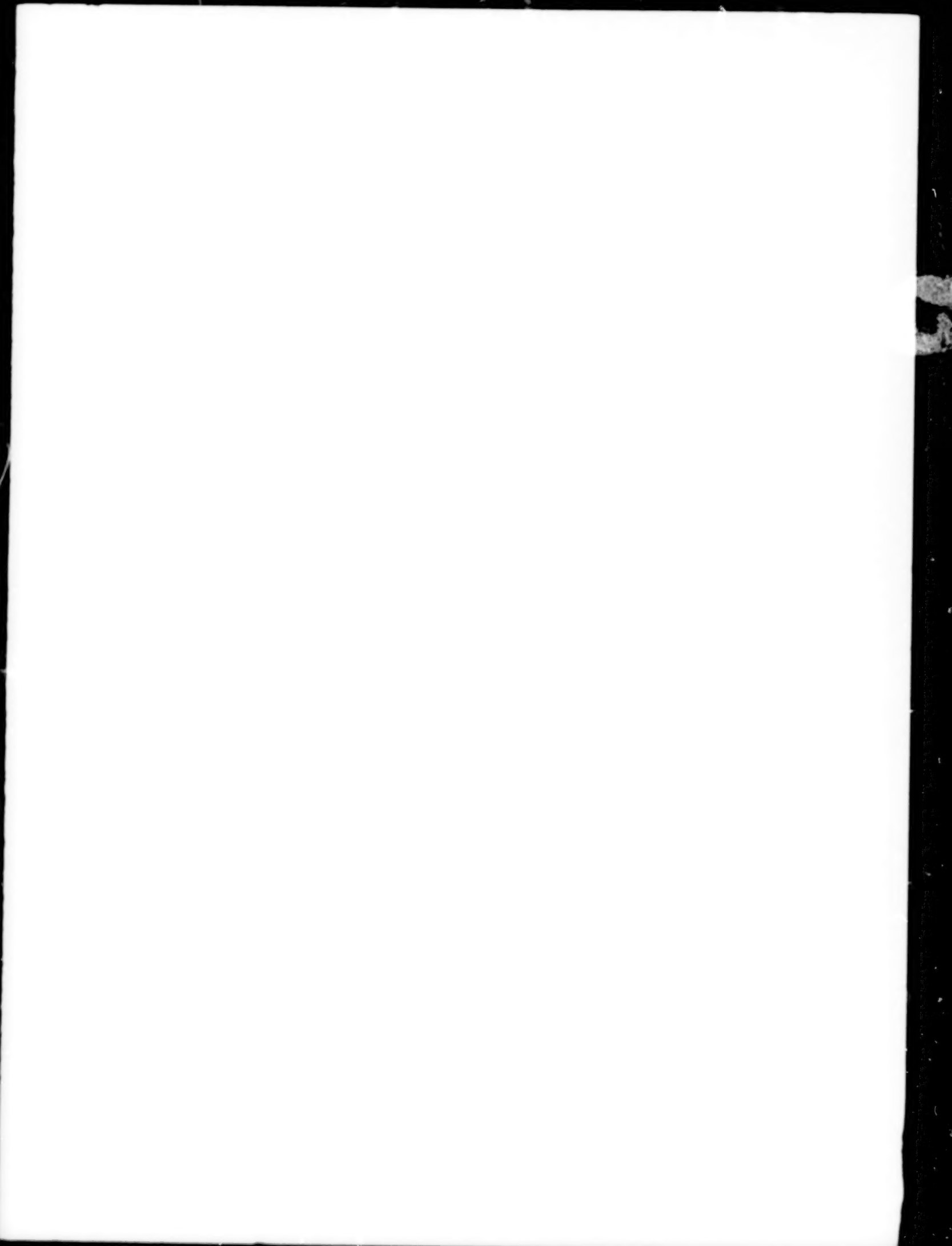
NASA Marshall Space Flight Center
MSFC, AL 35812

Serves Alabama, Arkansas, Iowa,
Louisiana, Missouri, and Tennessee

NASA Stennis Space Center
Stennis Space Center, MS 39529-6000

Serves Mississippi

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